SF

Notice of Allowability	Application No.	Applicant(s)	
	09/918,886	YEE ET AL.	
	Examiner	Art Unit	
	David S. Kim	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *02 June 2006*.

2. ☒ The allowed claim(s) is/are *1-4,7,8,10,13-26,28,29,38,39,41,43-51,53,54,61 and 62 (renumbered as 1-39)*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date 19 February 2002
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Erik A. Heter on Friday, July 14, 2006.

The application has been amended as follows:

In the claims

Claim 1 (strikethrough portions are deletions, underlined portions are additions)

"...a second optical tap coupled to the optical filter configured to tap a portion of ~~a~~ the composite optical ~~signals~~ signal leaving the optical filter"

"...a wavelength-locking device...configured to lock the frequency separation based on ~~a ratio~~ multiple ratios of the portions tapped by the optical taps".

Claim 5 (cancelled).

Claim 17 (strikethrough portions are deletions, underlined portions are additions)

"...a first optical transmitter configured to generate ~~a~~ said first optical signal, said first optical signal containing at least two subbands and a tone, each subband having a capacity of approximately 2.5 Gbps of information; and

a second optical transmitter configured to generate ~~a~~ said second optical signal, said second optical signal containing at least two subbands and a tone, each subband having a capacity of approximately 2.5 Gbps of information, wherein the second optical signal is orthogonally polarized to the first optical signal."

Claim 22 (strikethrough portions are deletions, underlined portions are additions)

"...an optical filter coupled to the optical combiner...to produce a composite optical signal;"

"...a second optical tap coupled to the optical filter for tapping a portion of a the composite optical ~~signals~~ signal leaving the optical filter; and

a wavelength-locking device coupled to the optical transmitters configured to lock a frequency separation of the combined optical signals to a predetermined value, the wavelength-locking device is coupled to the first optical tap and to the second optical tap~~, for locking~~ and configured to lock the frequency separation based on ~~a ratio~~ multiple ratios of the portions tapped by the optical taps."

Claim 29 (strikethrough portions are deletions, underlined portions are additions)

"an optical splitter configured to split the composite optical ~~signals~~ signal into multiple signals".

Claims 30-37 (cancelled).

Claim 38 (strikethrough portions are deletions, underlined portions are additions)

"...locking a frequency separation...based on ~~a ratio~~ multiple ratios of the first tapped portion of the composite optical signal and the second tapped portion of the composite optical signal".

Claim 50 (strikethrough portions are deletions, underlined portions are additions)

"...locking a frequency separation...based on ~~a ratio~~ multiple ratios of the first tapped portion of the optically combined signals and the second tapped portion of the optically combined signals".

Claims 55-58 (cancelled).

Claim 61 (strikethrough portions are deletions, underlined portions are additions)

"...a second optical tap coupled to the optical filter configured to tap a portion of ~~a~~ the composite optical ~~signals~~ signal leaving the optical filter".

In the specification (additions are the underlined portions, deletions are the strikethrough portions).

Paragraph [0003] – update status of applications:

-- This application related to ~~pending~~ U.S. Patent Application Serial No. ~~09/746,261~~ 09/746,370, "Wavelength-Locking of Optical Sources," by Shin-Sheng Tarng, et al., filed December 20, 2000 (now U.S. Patent No. 6,493,131, issued December 10, 2002). --

Paragraph [0004] – update status of applications:

-- This application also relates to ~~pending~~ U.S. Patent Application Serial No. 09/747,261, "Fiber Optic Communications using Optical Single Sideband Transmission and Direct Detection," by Ting K. Yee, and Peter H. Chang, and James F. Coward, filed December 20, 2000 (now abandoned). --

In paragraph [0005] – update status of applications, p. 2, l. 10-12:

-- ~~pending~~ U.S. Patent Application Serial No. 09/569,761, "Channel Gain Control For An Optical Communications System Utilizing Frequency Division Multiplexing," by Laurence J. Newell and James F. Coward, filed May 12, 2000 (now abandoned). --

Paragraph [0006] – update status of applications:

-- This application also relates to ~~pending~~ U.S. Patent Application Serial No. 09/405,367, "Optical Communications Networks Utilizing Frequency Division Multiplexing," by Michael W. Rowan, et al., filed Sept. 24, 1999 (now U.S. Patent No. 6,529,303, issued March 4, 2003); which is a continuation-in-part of ~~pending~~ U.S. Patent Application Serial No. 09/372,143, "Optical Communications Utilizing Frequency Division Multiplexing and Wavelength-Division Multiplexing," by Peter H. Chang, et al., filed August 20, 1999 (now abandoned); which is a continuation-in-part of U.S. Patent Application Serial No. 09/229,594, "Electrical Add-Drop Multiplexing for Optical Communications Networks Utilizing Frequency Division Multiplexing," by David B. Upham, et al., filed January 13, 1999 (now U.S. Patent No. 6,452,945, issued Sept. 17, 2002); which is a continuation-in-part of U.S. Patent Application No. 09/035,630, "System and Method for Spectrally Efficient Transmission of Digital Data over Optical Fiber", by Michael W. Rowan, et al., filed March 5, 1998 (now abandoned). --

In paragraph [0092] – update status of applications, p. 25, l. 15-17:

-- of U.S. Patent Application Serial No. 09/405,367, "Optical Communications Networks Utilizing Frequency Division Multiplexing," by Michael W. Rowan, et al., filed Sept. 24, 1999 (hereinafter, the "FDM Application", now U.S. Patent No. 6,529,303, issued March 4, 2003) --

In paragraph [0142] – correct informality on p. 42, l. 24; p. 43, l. 2; p. 43, l. 8:

-- This particular receiver subsystem 2500 includes an optical splitter ~~2533~~ 2532 coupled to two heterodyne receivers 2530A-B. --

-- The splitter ~~2533~~ 2532 splits the received composite optical signal 2590 into two optical signals 2592 A-B, one for each heterodyne receiver 2530. --

-- In this implementation, the optical splitter ~~2533~~ 2532 includes optical splitter 2533 coupled to two optical filters 2535 A-B. --

Otherwise, reference character "2532" may be missing from the specification, and reference character "2533" may be misplaced.

In the drawings

2. Applicant's compliance with the objections to the drawings in the previous Office Action (mailed on 27 February 2006) is noted and appreciated. Applicant responded by sending replacement drawings for Figs. 1-2, 4-7, 9-10, 12-13A, 13D-13E, 14A-14B, 16-18A, 23, and 24A-24D. The replacement drawings were received on 02 June 2006. Figs. 1-2, 4-7, 10, 12-13A, 13D-13E, 14A-14B, 17, 23, and 24A-24D are approved. Figs. 9, 16, and 18A are disapproved.

3. The following changes to the drawings have been approved by the examiner and agreed upon by applicant:

Fig. 9

In the upper half of Fig. 9, there are three spectrum graphs. In the middle graph, remove the labels "154L", "156", and "154u".

In the bottom half of Fig. 9, there are three spectrum graphs. In the middle graph, remove the labels "154L". In the right graph, remove the label "154L".

Fig. 16

In the top left corner, there is a spectrum graph. In this graph, there are two instances of "1666A(u)". Replace the left instance of "1666A(u)" with "1662A(u)".

In the bottom left corner, there is a spectrum graph. In this graph, there are two instances of "1666B(u)". Replace the left instance of "1666B(u)" with "1662B(u)".

Fig. 18A

The present Fig. 18A was filed on 02 June 2006. This present Fig. 18A is disapproved. Replace this present Fig. 18A with the ***old version of Fig. 18A filed on 17 October 2005*** and make the following changes to this old version of Fig. 18A filed on 17 October 2005:

- ***Under*** optical combiner 1614 and optical filter 1615, remove the following: detector 1818, detector 1820, synchronous detector 1822, synchronous detector 1824, comparison circuitry 1834, and all of their associated input and output lines.
- From the second sinusoidal generator F2, draw lead lines that couple the second sinusoidal generator F2 to synchronous detector 1822 (located ***above*** optical combiner 1614 and optical filter 1615) and synchronous detector 1824 (located ***above*** optical combiner 1614 and optical filter 1615), similar to the lead lines that couple the first sinusoidal generator F1 to these same synchronous detectors.
- From comparison circuitry 1834 (located ***above*** optical combiner 1614 and optical filter 1615), draw a lead line that couples this comparison circuitry 1834 to laser 1712B, similar to the lead line that couples this comparison circuitry 1834 to laser 1712A.
- Replace "1660" in the upper half of the figure with "1660A".
- Add "1660B" under "Signal" in the bottom half of the figure.
- Add a reference character "1800" that points to the entire device. See paragraphs [0044-0045, 0126] for support.

In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

Priority

4. Applicant maintains that the present application is entitled to the priority as previously stated for at least the reasons given in the previous office action response. Examiner acknowledges Applicant's position. Similarly, Examiner directs attention to Examiner's previous response (mailed on 27 February 2006, discussion of Priority on p. 2-3).

Information Disclosure Statement

5. Regarding the IDS filed on 19 February 2002, Examiner asserted that this IDS failed to comply with 37 CFR 1.98(a)(2) because it did not include a copy of all of the listed documents (see previous Office

Action mailed on 27 February 2006). However, Examiner notices that the instant application is a continuation-in-part of Application Serial No. 09/728,373, which is a continuation-in-part of Application Serial No. 09/474,659. IDS documents were also submitted for parent application 09/474,659. After reviewing the IDS documents in this parent application, Examiner found copies of the documents that were not previously considered. Accordingly, the IDS filed on 19 February 2002 complies with 37 CFR 1.98(a)(2), and all the listed documents of this IDS have been considered.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tarng et al. is cited to show related teachings of wavelength-locking of optical sources and signals.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSK

KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER

OIPE IAP43
JUN 0 2 2006
PATENT & TRADEMARK OFFICE

Approved by DSK
July 2006
14

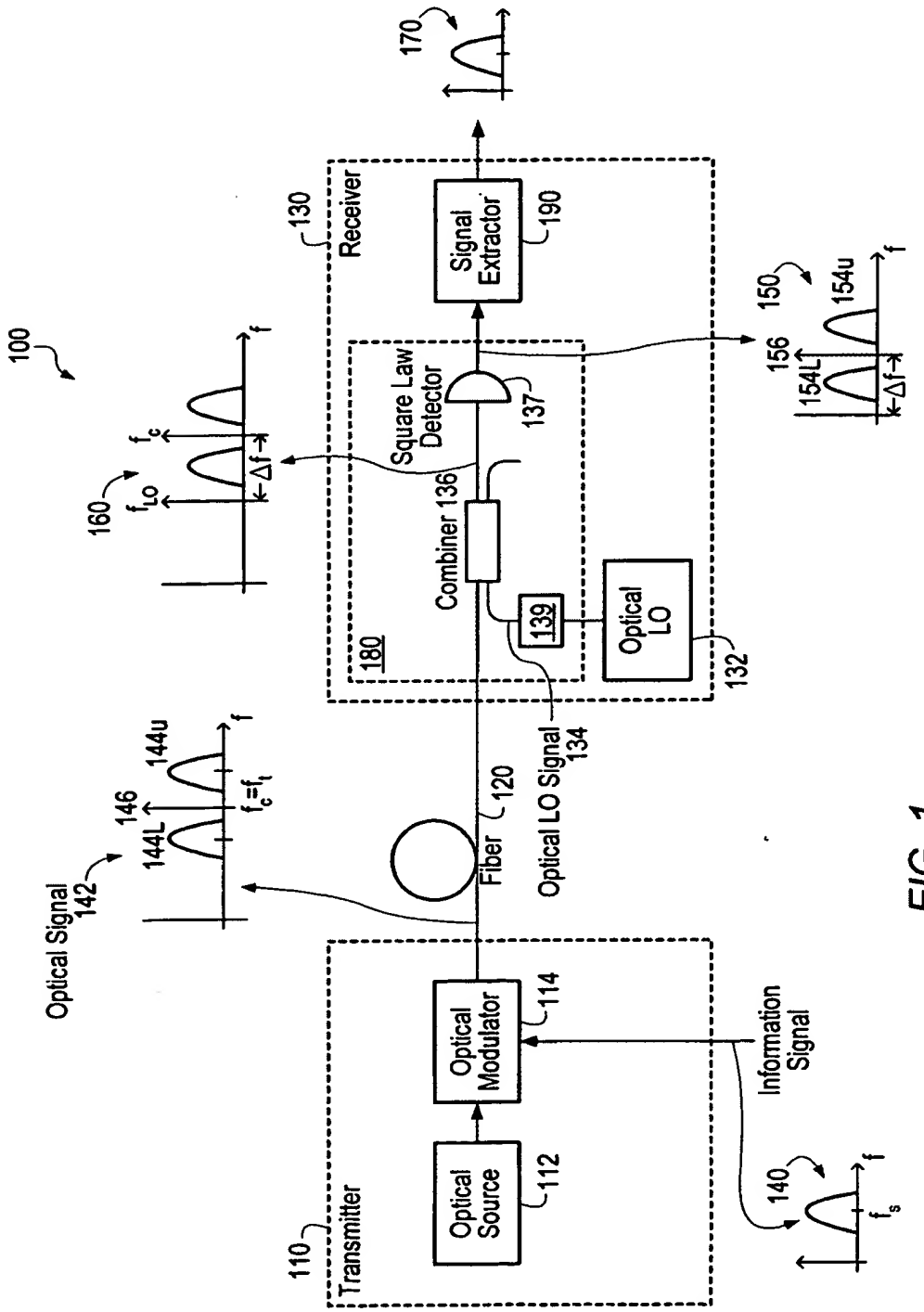

FIG. 1

Approved by PSK
14 July 2006

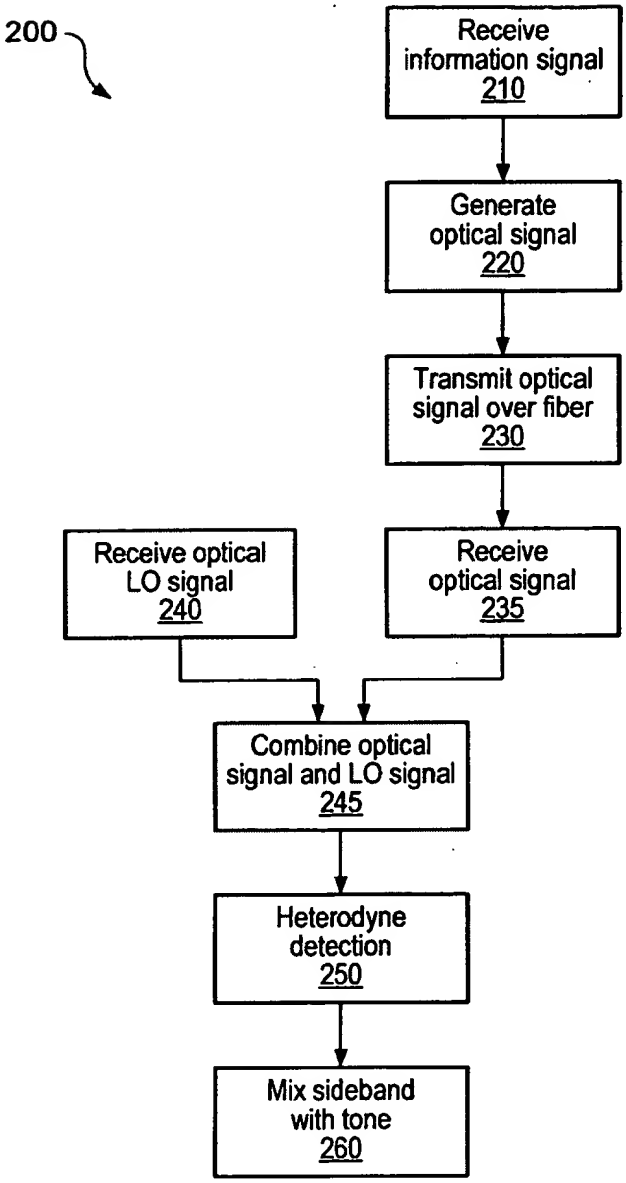

FIG. 2

Approved by DSK
14 July 2006

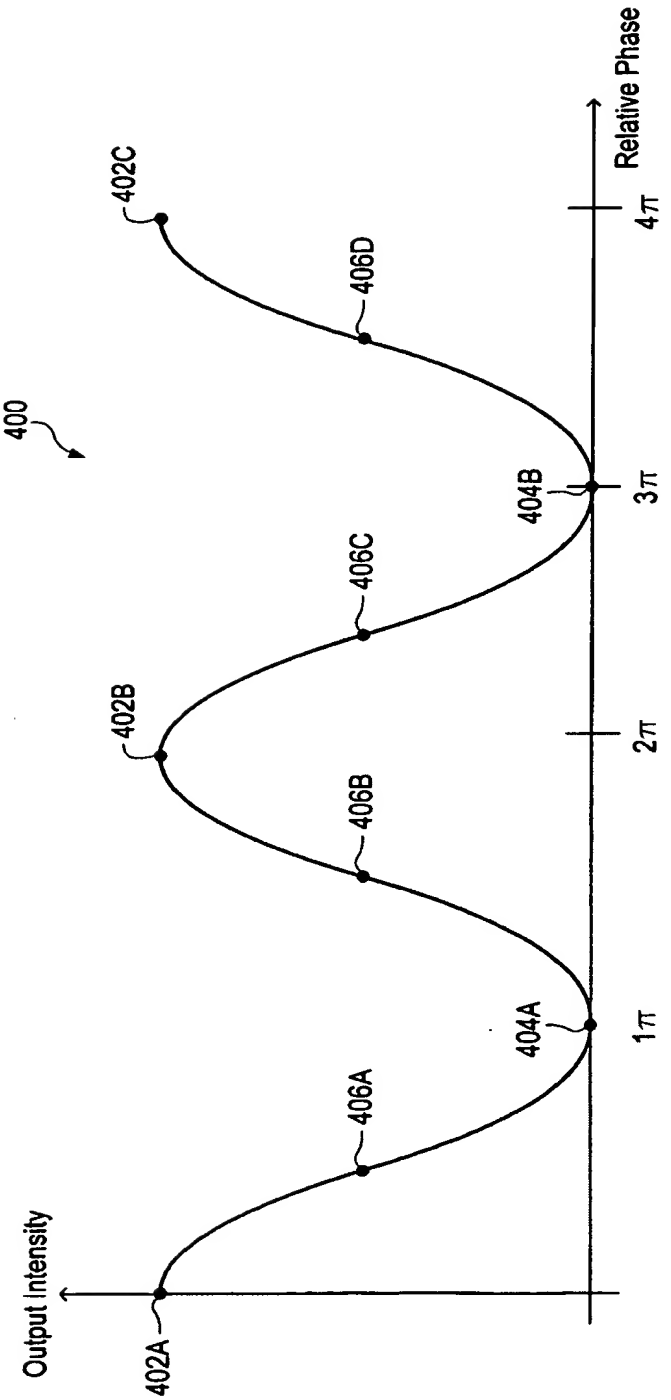

FIG. 4

Approved by DSK
14 July 2006

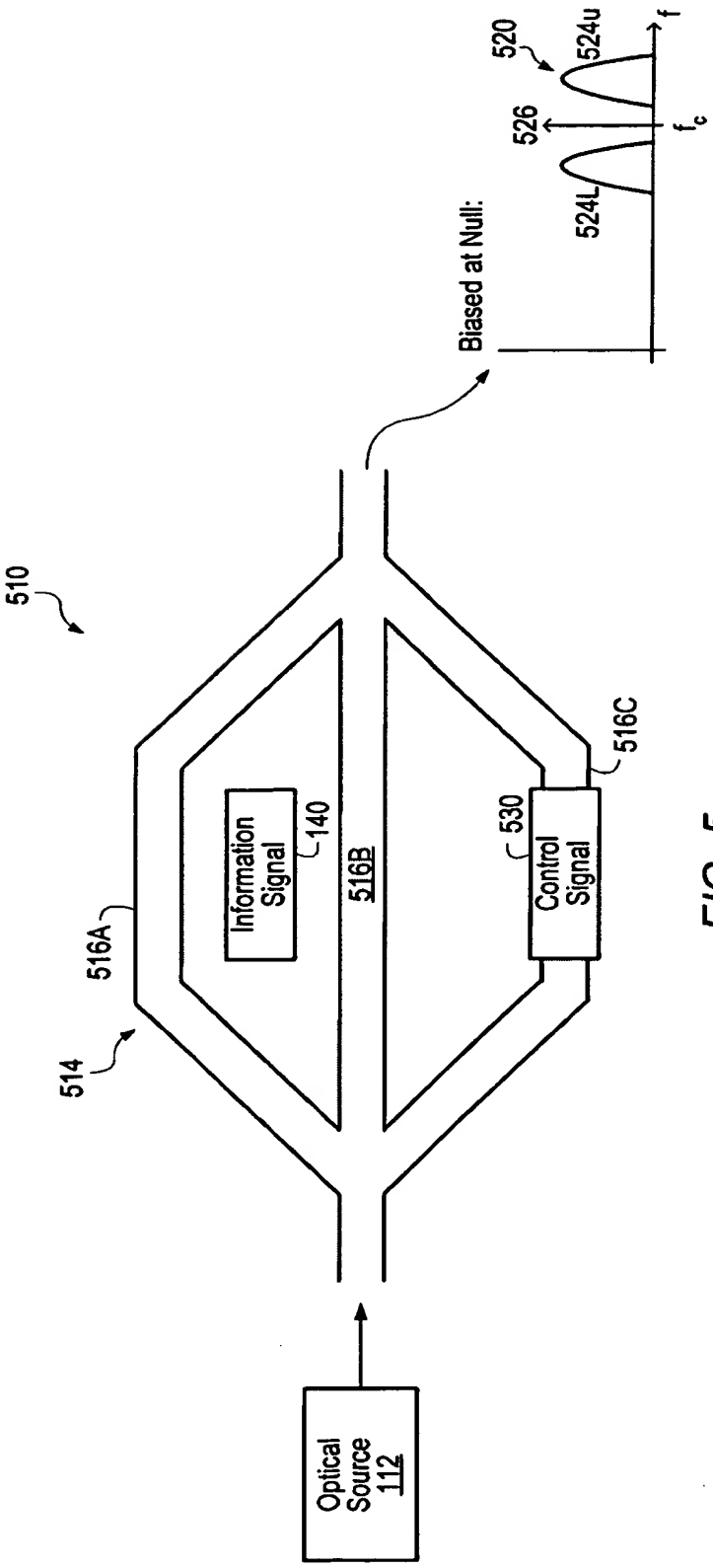

FIG. 5

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14 July 2006

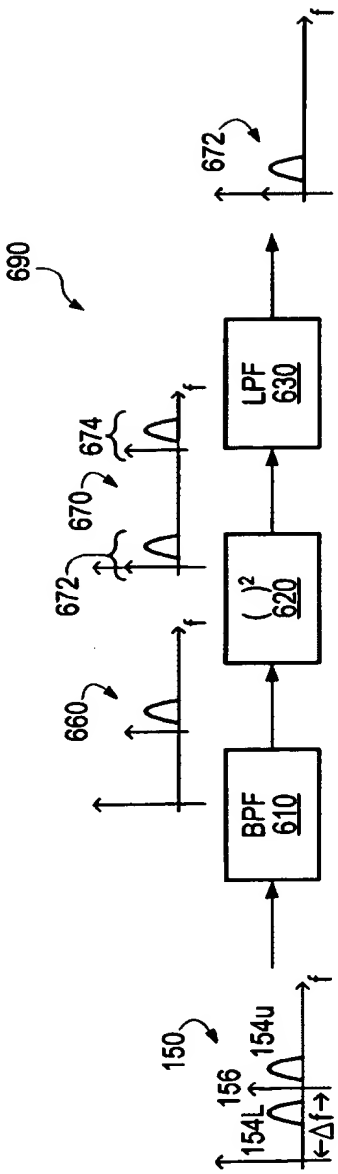

FIG. 6

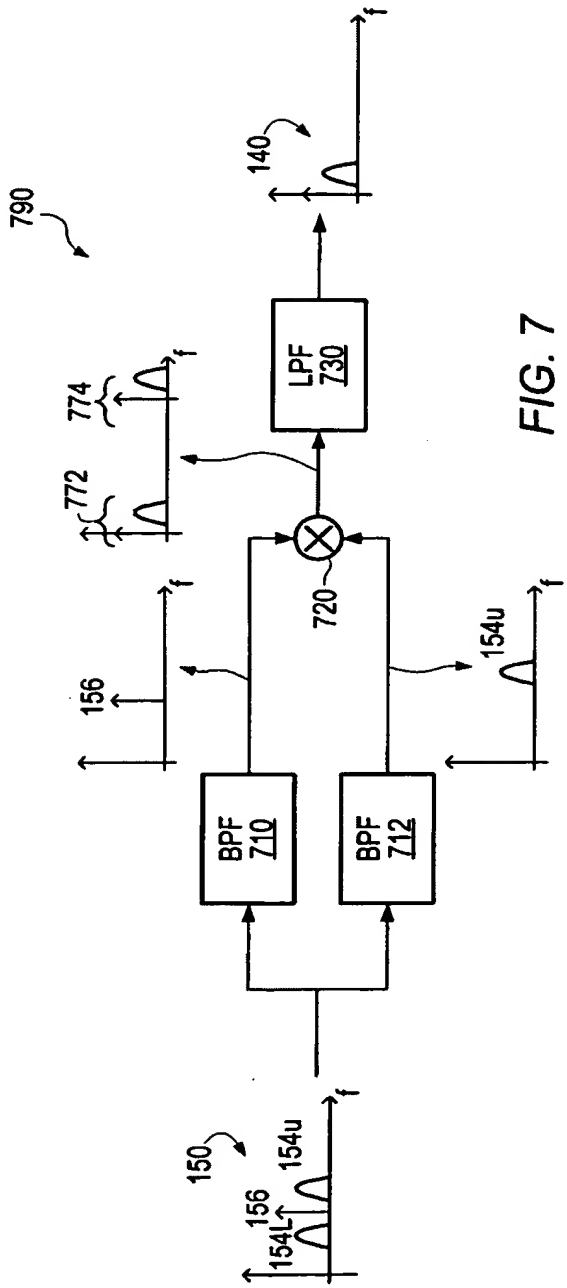

FIG. 7

Disapproved by DSK
14 July 2006

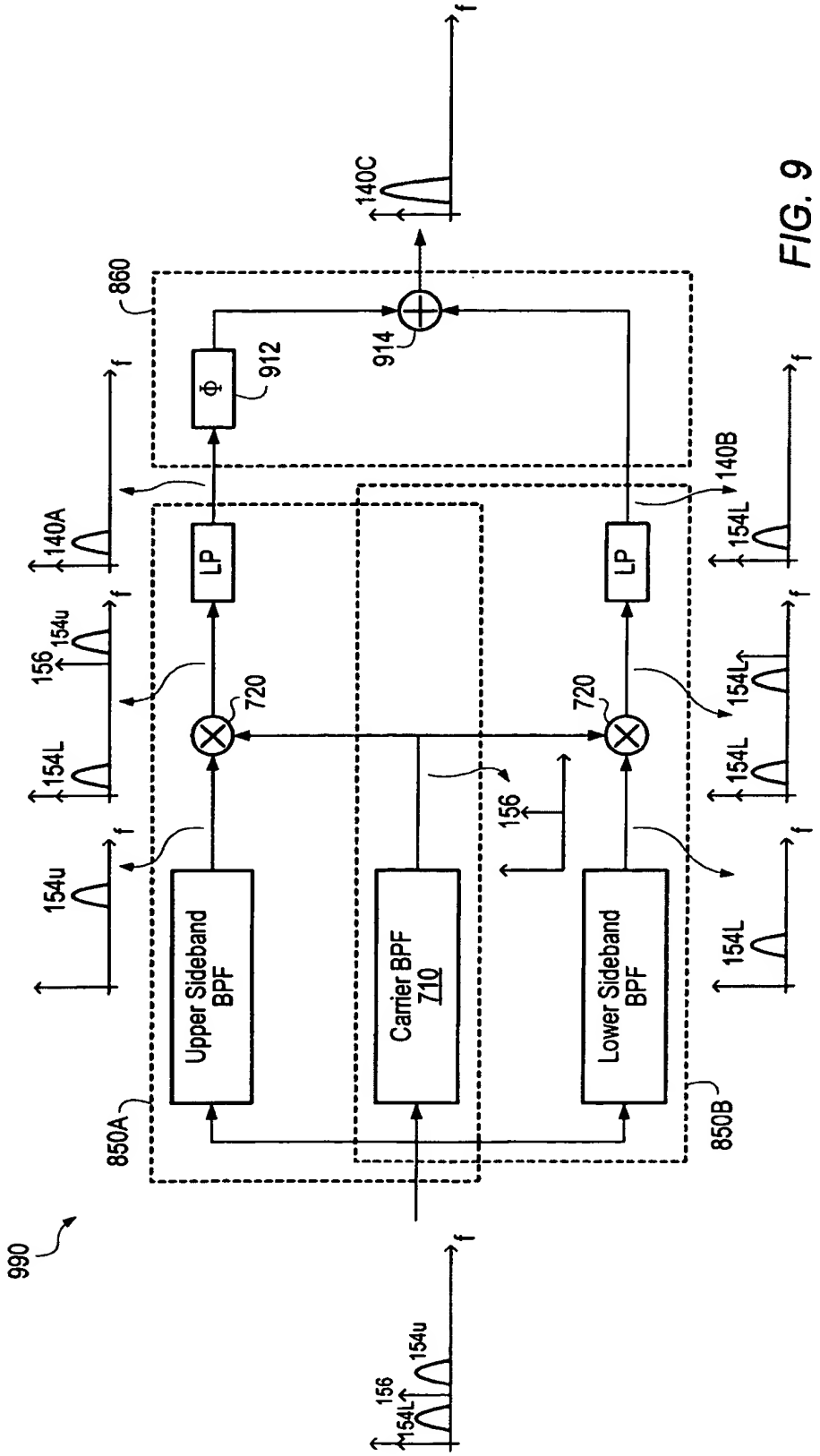

FIG. 9

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14 July 2006

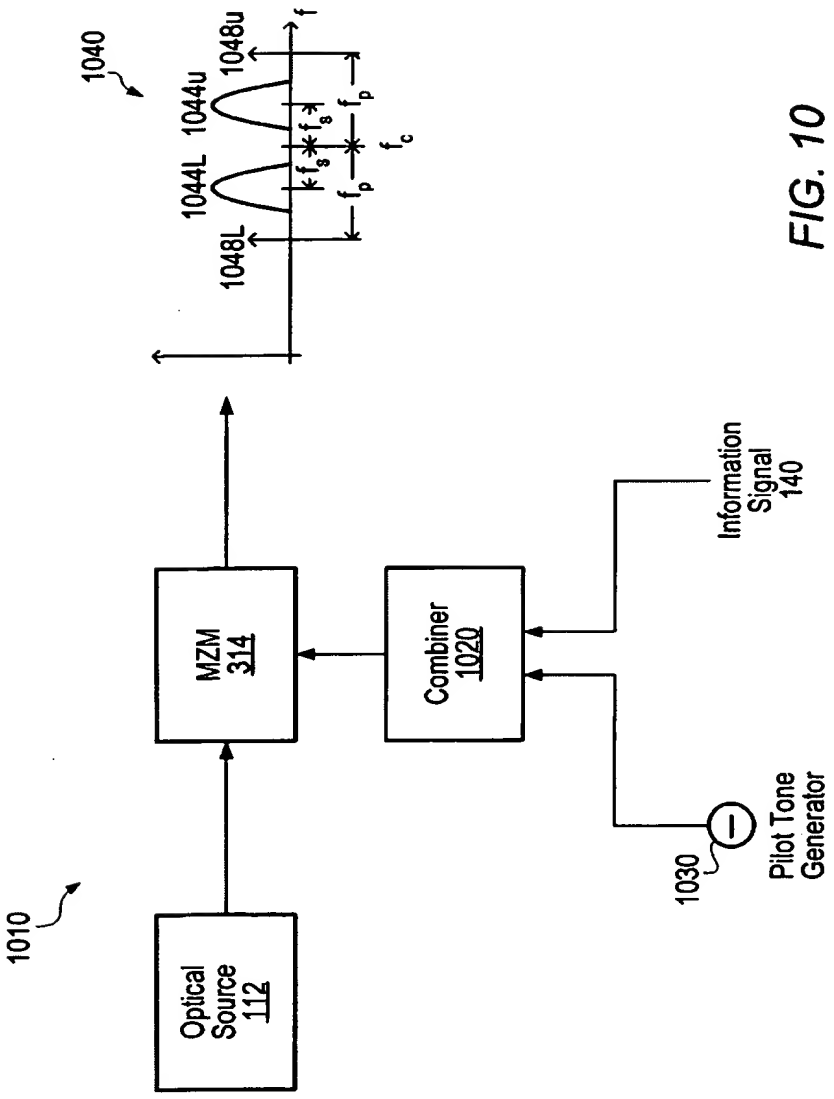

FIG. 10

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14 July 2006

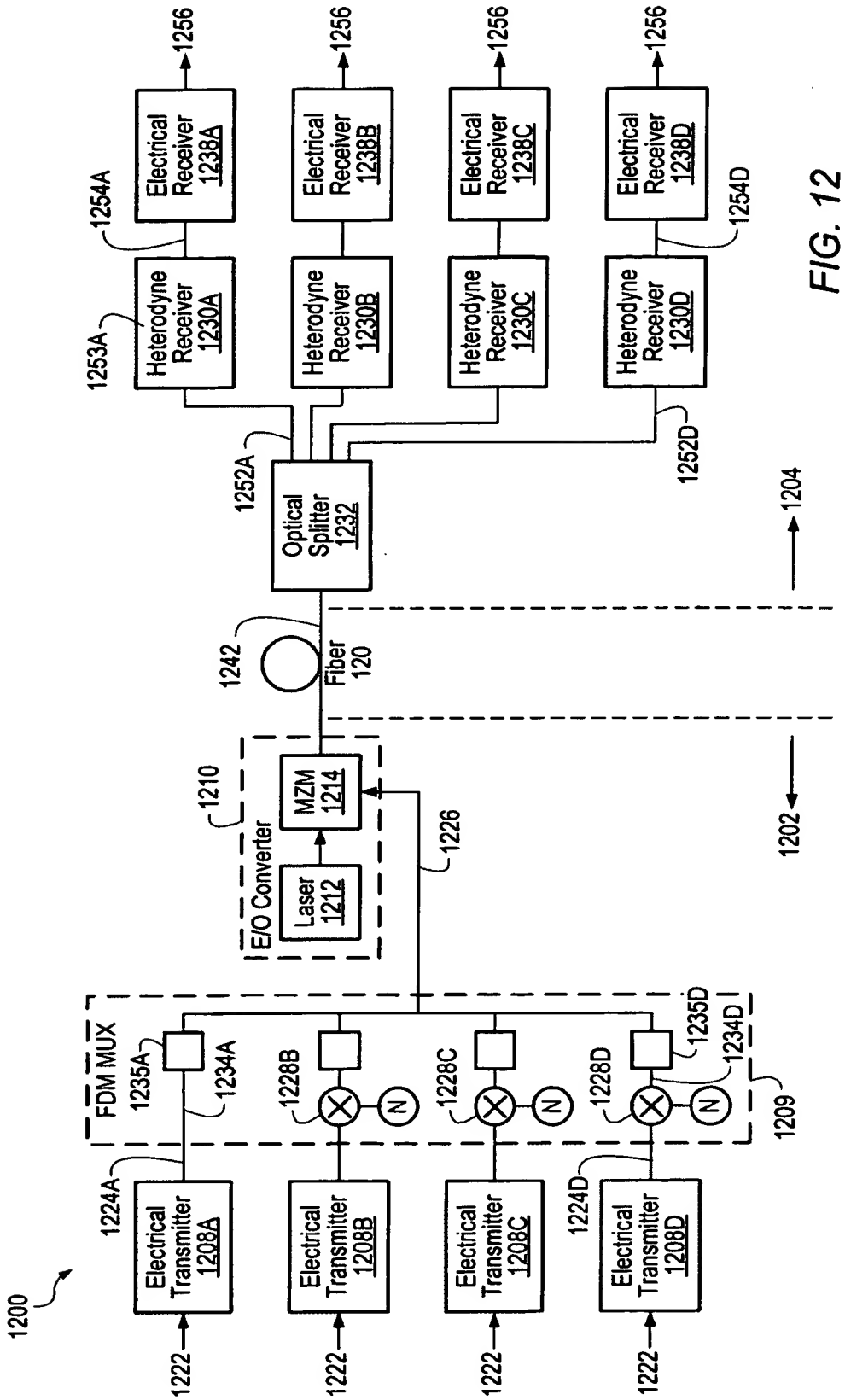

FIG. 12

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14 July 2006

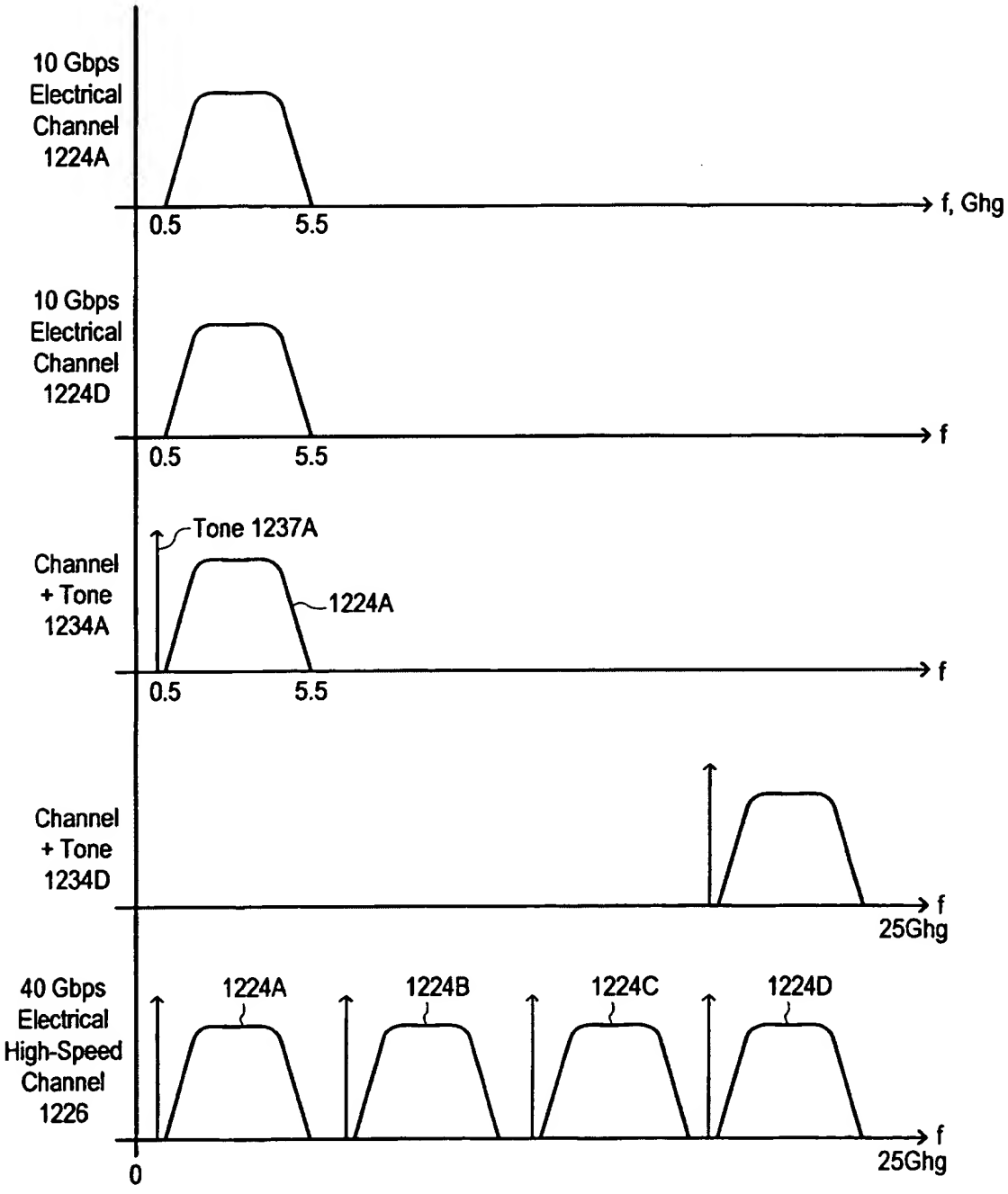

FIG. 13A

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14 July 2006

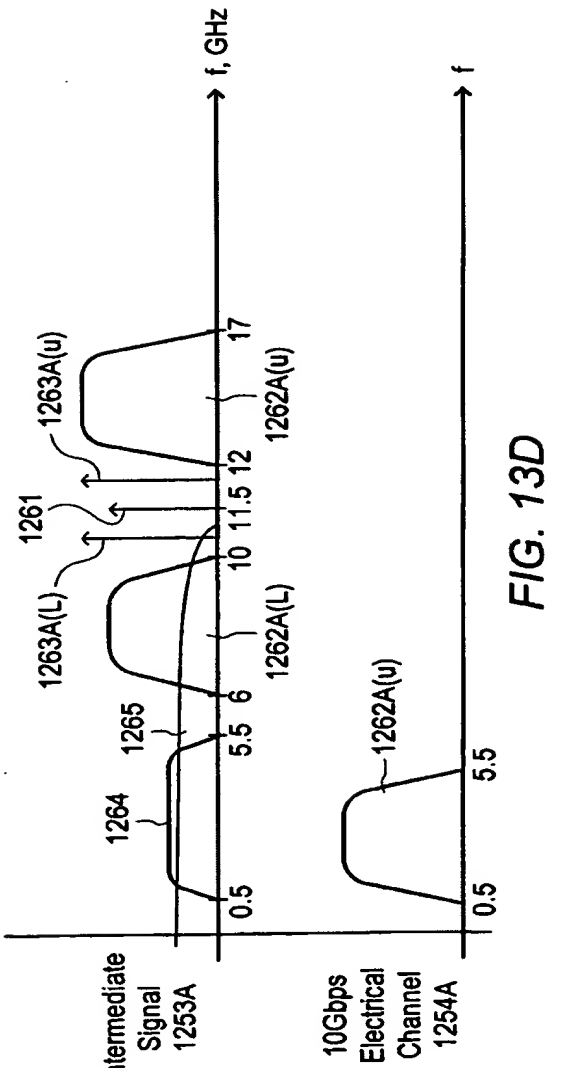

FIG. 13D

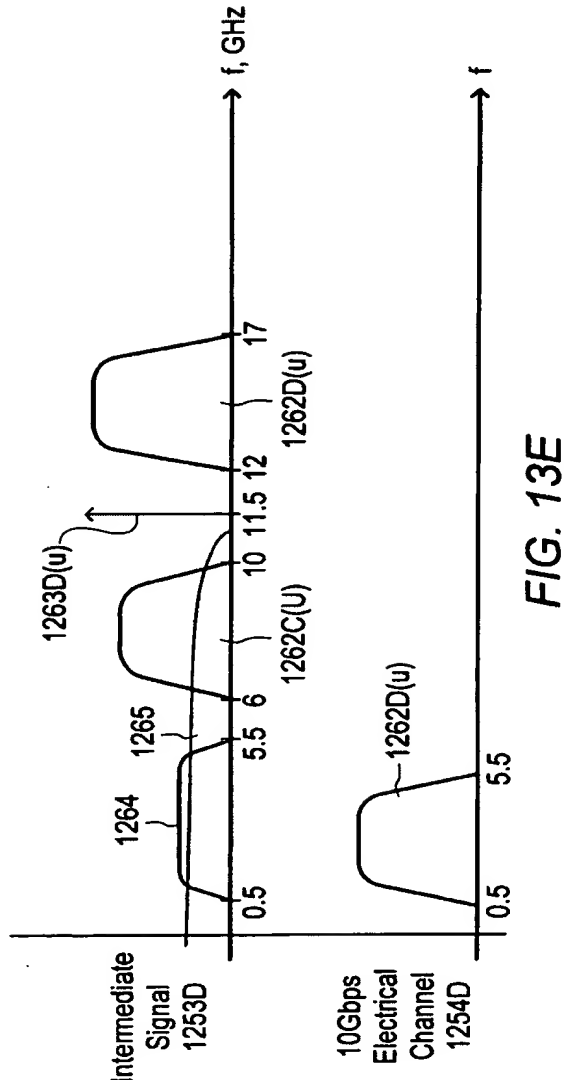

FIG. 13E

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14 July 2006

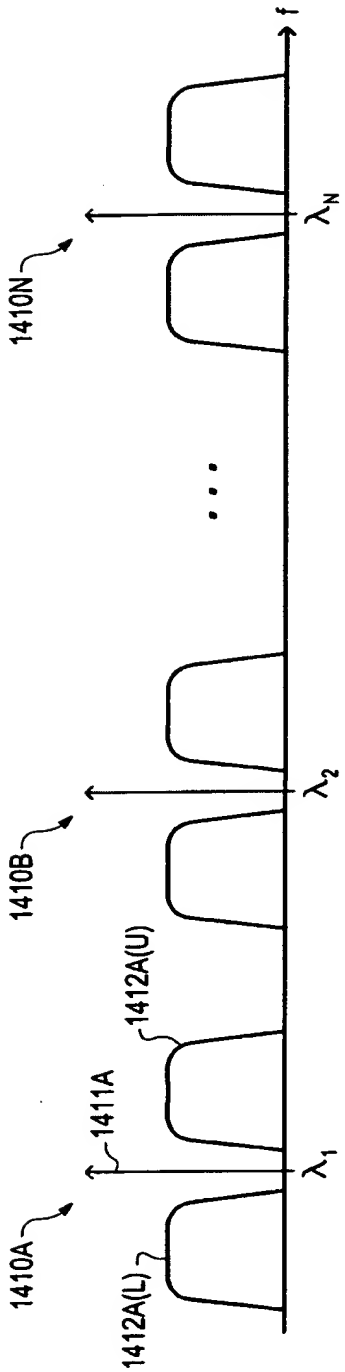

FIG. 14A

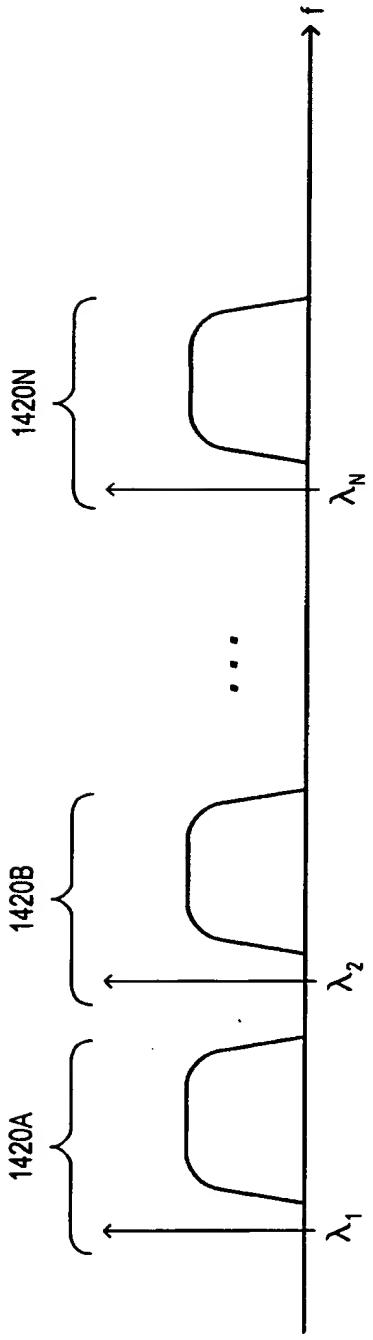

FIG. 14B

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14 July 2006

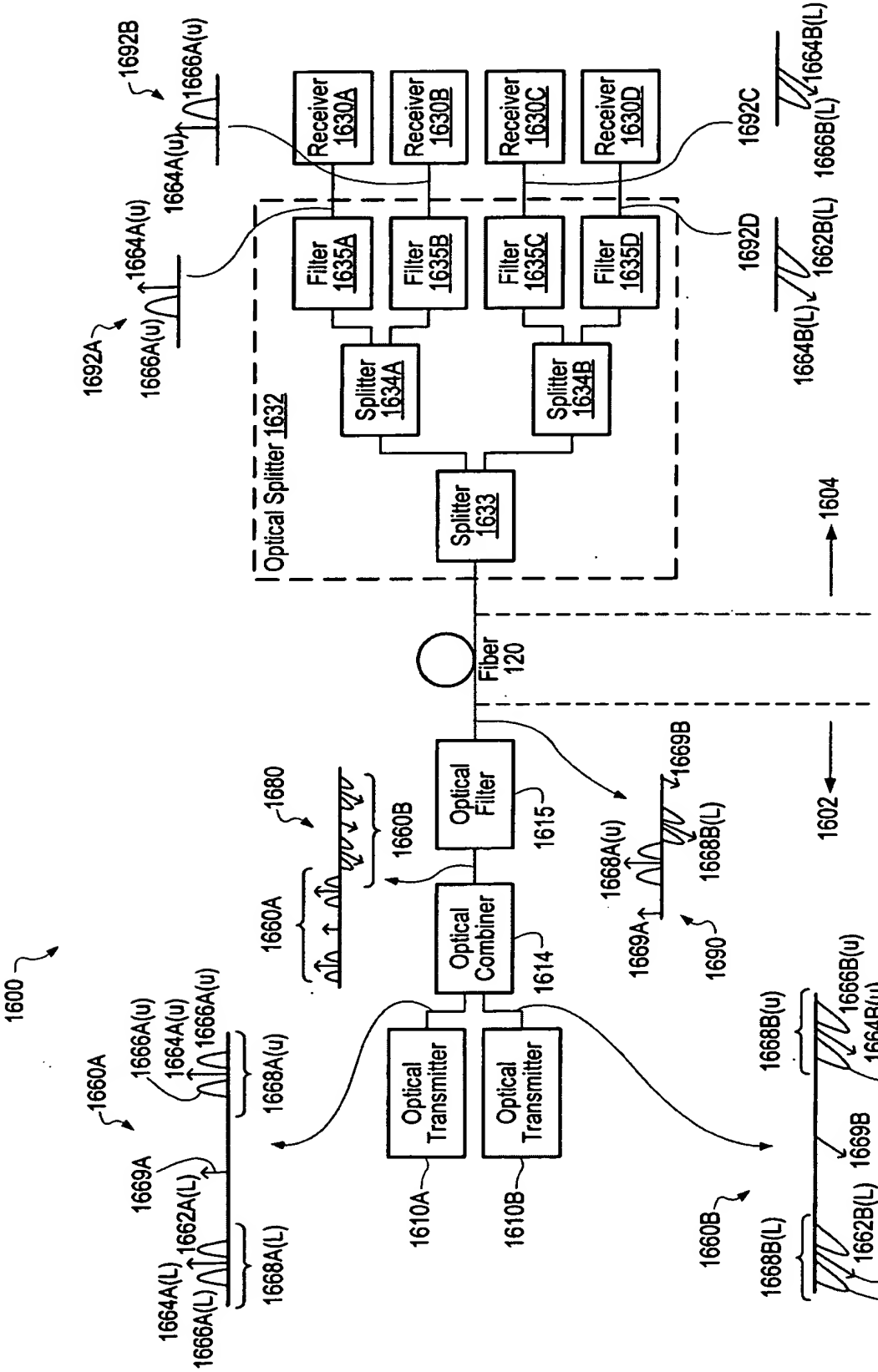

FIG. 16

Approved by PSK
14 July 2006

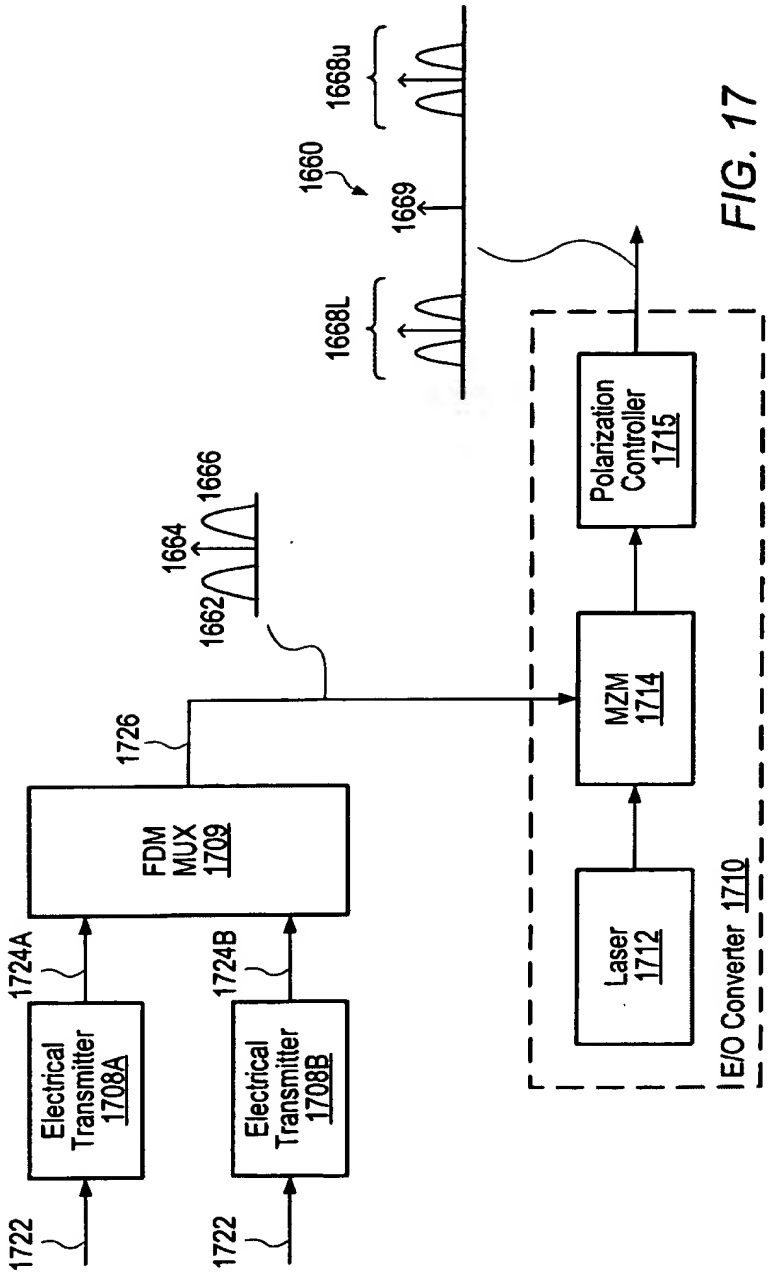

FIG. 17

Disapproved by PSK
14 July 2006

Replacement Sheet

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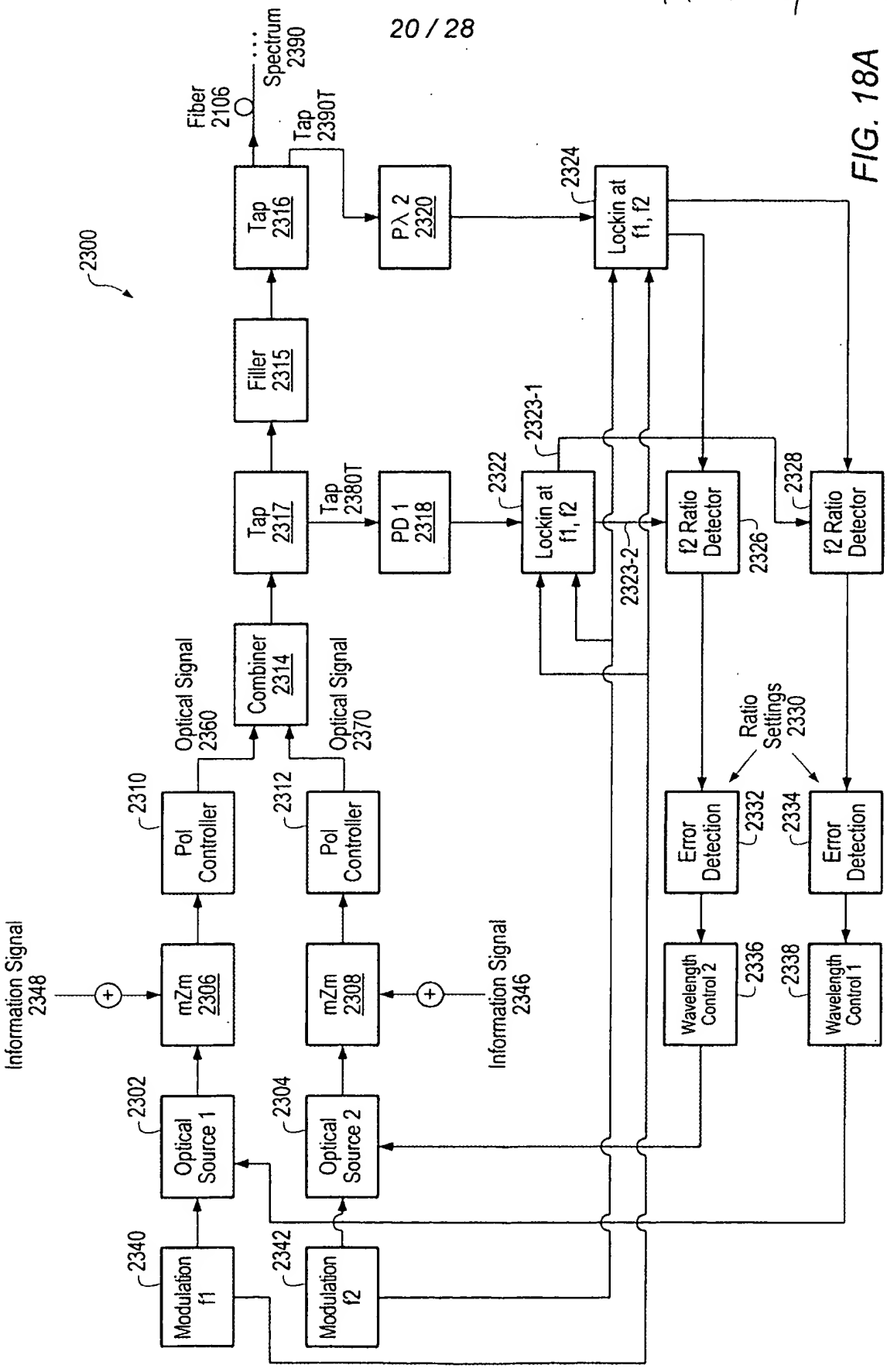

FIG. 18A

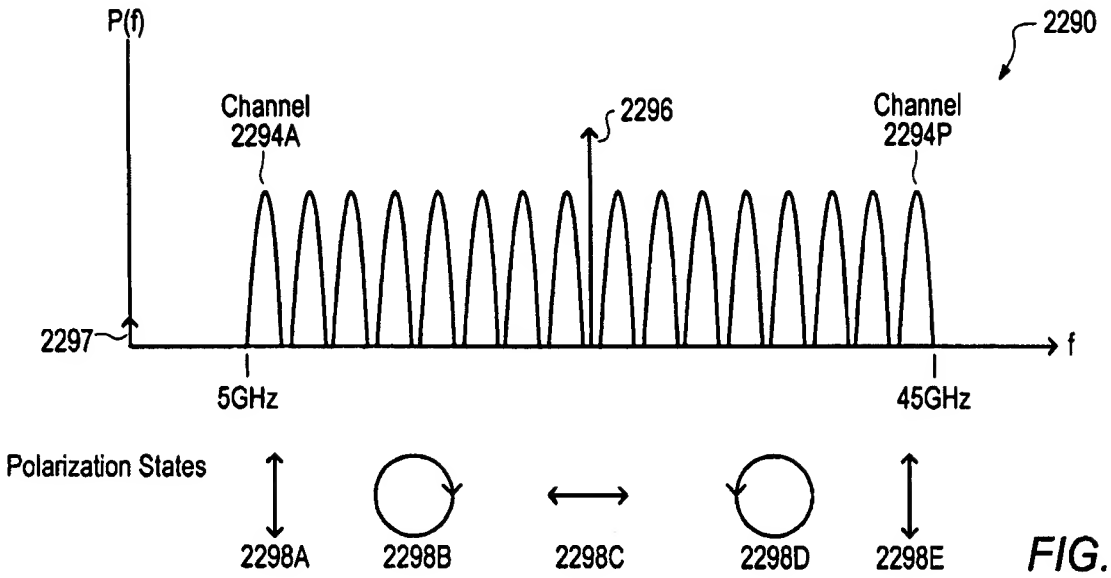

FIG. 23

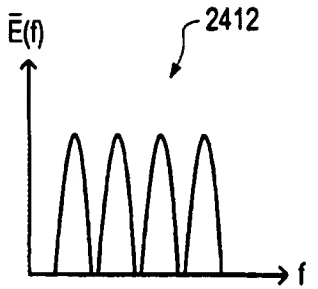

FIG. 24A

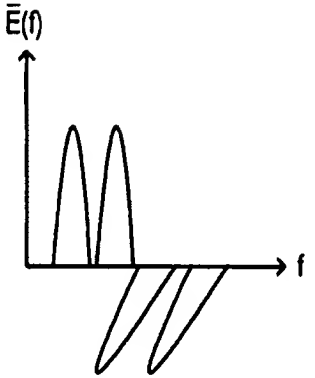

FIG. 24B

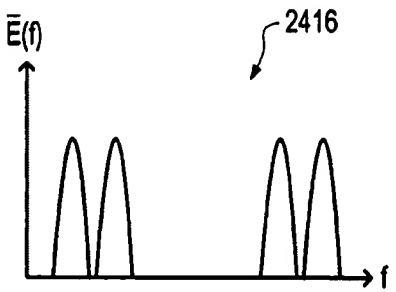

FIG. 24C

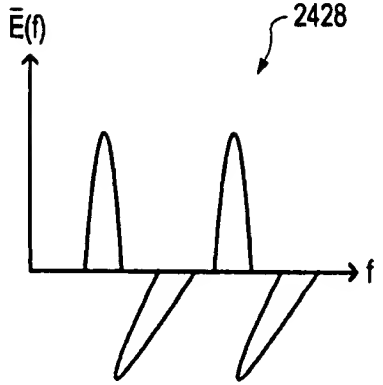

FIG. 24D

Replacement Sheet

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14 July 2006